

## DOES GEHRINGIA BELONG TO THE ISOCHAETA? (COLEOPTERA: CARABIDAE)

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The minute and aberrant carabid *Gehringia olympica* Darlington has been difficult to put into the classification of the family. Darlington (1933), following the system used in the Leng Catalogue (1920), placed it in the subfamily Carabinae.

Jeannel (1941) proposed a new classification of the Carabidae (which he raised to the rank of superfamily), in which the primary division was into a Series Isochaeta and a Series Anisochaeta. (For a general discussion of this and other proposed classifications of the Carabidae, see Ball, 1960.) In the Series Isochaeta, Jeannel grouped those carabids in which both spurs of the anterior tibia are terminal in position, the posterior one not being displaced proximally by the antenna cleaner. The latter is a well-developed emargination lying entirely proximad to the spurs. The Series Anisochaeta included those carabids in which the posterior spur is displaced more or less proximally, and the antenna cleaner, if well developed, lies between the spurs. He placed *Gehringia* in the Isochaeta. Lindroth (1960) and Ball (1960) regard the Isochaeta as an artificial assemblage, and split it into several subfamilies. Nevertheless, they use the isochaetous type of anterior tibia as one of several characters justifying the inclusion of *Gehringia* with *Trachypachus* in a subfamily Trachypachidinae (spelled Trachypachinae by Lindroth).

Recently, while investigating the mouth parts of *Gehringia*, I had the opportunity of examining and drawing the leg of a cleared specimen (Fig. 1). I noted that, although there appeared to be two spurs, they are not arranged as in other Isochaeta. The larger spur lies on the inner margin of the tibia. A line of stiff hairs leads from it to the antenna-cleaner. It is, therefore, evidently homologous to the anterior tibial spur of other Carabidae. The other spur, which is considerably smaller, does not lie on the inner face posterior to the anterior spur, as would be expected in Isochaeta, but is instead located on the outer margin, slightly proximad to the apex of the tibia. The margin of the latter is oblique for a short distance between the outer "spur" and the base of the tarsus. Proximad to it, a row of very fine but rather long setae extends up the outer face of the tibia. It seems probable that the supposed second spur is really a spinose hair, representing the lowest one on the series on the outer face of the tibia. This theory is rendered more plausible by the presence of a much larger spur-like structure on the ventral margin of the femur, in a location where most carabids have a tactile seta.

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In *Tachys* (Tribe Bembidiini), a spinose hair forms a false spur in exactly the same position as in *Gehringia*. In *Tachys*, however, there is a well-developed spur associated with the antenna-cleaner, so that the front tibia appears to have three spurs. If a species of *Tachys* were to lose the proximal (originally the posterior) spur above the antenna-cleaner, it would then have an anterior tibia almost identical to that of *Gehringia*. Since the posterior tibial spur has completely disappeared, it can not be used in deciding whether *Gehringia* belongs with the Isochaeta or the Anisochaeta.

However, a feature of the mouth parts suggests that *Gehringia* should be excluded from the Isochaeta. With the exception of *Gehringia*, all of the Isochaeta which I have been able to study have shown a characteristic reduplication of the tactile setae of the labrum. In *Gehringia* (Fig. 2), there are only the six setae found in almost all Carabidae. In *Trachypachus* (Fig. 4), *Metrius*, and in the two genera of Ozaenini available to me, *Tropopsis* and *Mysteropomus* (Fig. 3), there are approximately twelve tactile setae on the labrum, although the number seems to vary slightly. This character seems to imply that the Isochaeta are a natural group and that *Gehringia* should be excluded from it.

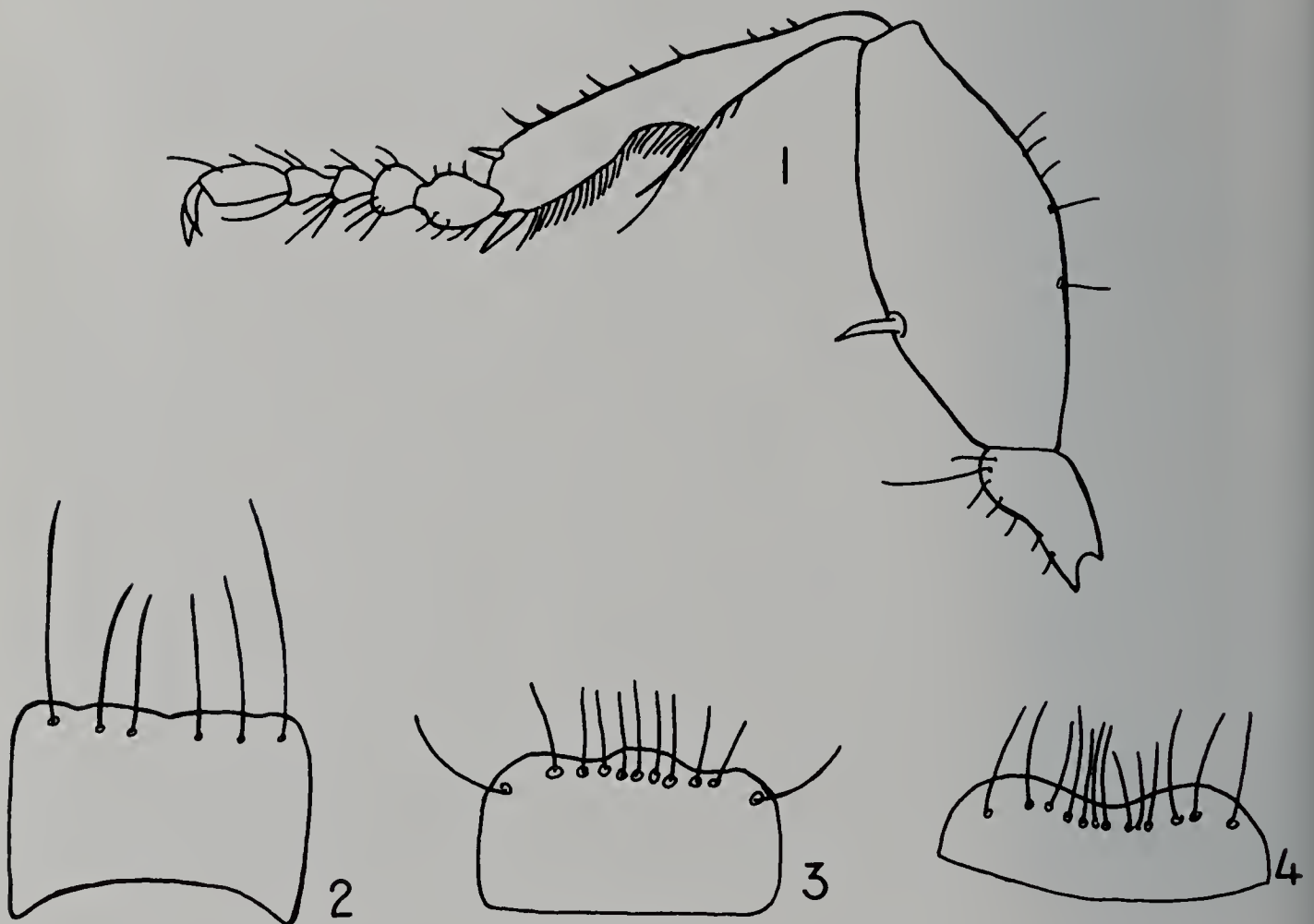


FIGURE 1—*Gehringia olympica* Darlington, anterior view of anterior leg. FIGURE 2—*Gehringia olympica* Darlington, labrum, dorsal view. FIGURE 3—*Mysteropomus regularis* Bänninger, labrum, dorsal view. FIGURE 4—*Trachypachus gibbsi*, LeConte, labrum, dorsal view.

If it is desired to modify the classification of Ball, *Gehringia* should be transferred to the Subfamily Carabinae, of which it may form a Tribe, Gehringiini. (The Subfamily Carabinae of Ball is approximately equivalent to the Anisochaeta of Jeannel.) The removal of *Gehringia* would leave the Isochaeta as a relatively homogeneous group, with the structure of the tibial spurs, antenna-cleaner, and the chaetotaxy of the labrum as common characters. I believe that these characters imply a real relationship, and that the Subfamilies Paussinae, Metriinae, and Trachypachydinae (excluding Gehringiini) of Ball should be united to form a Subfamily Paussinae, approximately equivalent to Jeannel's Isochaeta.

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#### CEUTORHYNCHUS ASSIMILIS (PAYK.), NEW TO EASTERN NORTH AMERICA (COLEOPTERA: CURCULIONIDAE).

The finding of *C. assimilis* (Payk.) May 16, 1960, on turnips, in Henderson Co., North Carolina, represents the first record of this species in eastern North America. A serious pest of Cruciferae, the species was previously found only in the Pacific Northwest, in Washington, Oregon, British Columbia, and northern California.—ROSE ELLA WARNER, *Ent. Res. Div., A.R.S., U. S. Department of Agriculture, Washington, D. C.*